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09/837,714	04/18/2001	Daniel A. Japuntich	48317USA3M.032	9172

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EXAMINER
LEWIS, AARON J

ART UNIT	PAPER NUMBER
3761	

DATE MAILED: 04/01/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.	Applicant(s)
09/837,714	DANIEL A. JAPUNTICH ET AL.
Examiner	**Art Unit**
AARON J. LEWIS	3761

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *THREE* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *Apr 18, 2001*

2a) ☐ This action is **FINAL.** 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *33-64* is/are pending in the application.

4a) Of the above, claim(s) _____ is/are withdrawn from consideratio

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *33-64* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirement

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a) ☐ All b) ☐ Some* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15) ☒ Notice of References Cited (PTO-892)

16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). *02*

18) ☐ Interview Summary (PTO-413) Paper No(s). _____

19) ☐ Notice of Informal Patent Application (PTO-152)

20) ☐ Other:

DETAILED ACTION

Double Patenting

1. Claims 33-64 of this application conflict with claims 33-68 of Application No. 09/837,800; 34-38,40-74,78-81 of 08/240,877; 33-71 of 09/678,579; 33-58,60-67 of 09/678,580; 33-54,56-61 of 09/678,488; 33-54,56 of 09/677,637; 33-36,38-62,64-66 of 09/677,636. 37 CFR 1.78(b) provides that when two or more applications filed by the same applicant contain conflicting claims, elimination of such claims from all but one application may be required in the absence of good and sufficient reason for their retention during pendency in more than one application. Applicant is required to either cancel the conflicting claims from all but one application or maintain a clear line of demarcation between the applications. See MPEP § 822.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 33,43,44,46,49-64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simpson et al.('516) in view of McKim('618).

As to claim 33, Simpson et al. disclose a filtering face mask that comprises: a mask body adapted to fit over the nose and mouth of a person (fig.1); and an exhalation valve (13) that is attached to the mask body, which exhalation valve comprises: a valve seat that comprises an orifice (16) and a seal surface, the orifice allowing exhaled air to pass therethrough and being surrounded by the seal surface; and a single flexible flap (15) non-centrally and operative supported relative to the orifice of the valve seat and pressed against the seal surface of the valve seat in a closed state of the exhalation valve.

The differences between Simpson et al. and claim 33 are the flexible flap assuming, in its closed state, a curved profile in a cross-sectional view thereof, the curved profile comprising a curve that extends from a first point where a first stationary portion of the flexible flap is secured to the valve seat to a second point where a second free portion of the flexible flap contacts the seal surface, the flexible flap being held in its closed state, at least in part, by virtue of the curved profile thereof; wherein the second free portion of the flexible flap represents the only free portion of the flap and can flex so as to permit exhaled air to pass through the orifice and to provide an open state of the exhalation valve such that the second free portion of the flexible flap is out of contact with the seal surface at the second point while the first portion of the flexible flap remains stationary at the first point.

McKim teaches a flexible flap which assumes, in its closed state (figs.1 and 2), a curved profile in a cross-sectional view thereof, the curved profile comprising a curve that extends from a first point where a first stationary portion (14a) of the flexible flap is secured to the valve seat to a

second point where a second free portion (29) of the flexible flap contacts the seal surface, the flexible flap being held in its closed state, at least in part, by virtue of the curved profile thereof; wherein the second free portion of the flexible flap represents the only free portion of the flap and can flex so as to permit exhaled air to pass through the orifice and to provide an open state of the exhalation valve such that the second free portion of the flexible flap is out of contact with the seal surface at the second point while the first portion of the flexible flap remains stationary at the first point. McKim teaches the positioning of the flexible flap in this position for the purpose of seating quickly, effectively and without float or bounce after each opening (col.1, lines 64-72).

It would have been obvious to modify the exhalation valve of Simpson et al. to be mounted to the valve seat such that the one free portion (opposite the fixed portion #14a as illustrated in fig.3 of McKim) of the flap exhibits a curvature when viewed from the side and is pressed towards the seal surface in an abutting relationship with it when a fluid is not passing through the orifice for because it would have provided for seating quickly, effectively and without float or bounce after each opening as taught by McKim.

As to claim 43, Simpson et al. (fig.2) discloses the valve seat including a flange portion that defines a mounting surface for the valve seat, which surface extends 360 degrees around the valve seat an its base and enables the valve seat to be secured to the mask body.

As to claim 44, the shape of the orifice (16) of Simpson et al. does not fully correspond to the shape of the seal surface and the flexible flap (15) is mounted to the valve seat in cantilever fashion.

As to claim 46, the curvature of the flexible flap of Simpson et al. as modified by McKim extends from a plurality of points where the flap is affixed to the valve seat to a plurality of points which are opposite the plurality of points on the fixed portion of the flexible flap.

As to claim 49, the relative dimensions and spacing of the constituents of the exhalation valve of Simpson et al. can be arrived at through mere routine obvious experimentation and observation with no criticality seen in any particular relative spacing including 1-3.5 mm between the flap retaining surface and the orifice because of the use of different sizes of valves in an effort to accommodate different sized wearers.

As to claim 50, the particular material from which the valve seat of Simpson et al. is made and the manner of making the valve seat can be arrived at through mere routine obvious experimentation and observation with no criticality seen in any particular material including a relatively light weight plastic. Inasmuch as Simpson et al. (page 2, lines 37-65) disclose the valve flap being made from plastic and/or rubber material, it would have been obvious to make the valve seat from any well known material which would achieve known or expected results including a plastic and/or rubber material because the use of a valve seat of the same material as the valve flap would have provided for more effective physically cooperation.

As to claim 51, Simpson et al. disclose the flexible flap being pressed towards the seal surface such that there is a substantially uniform seal when the valve is in a closed position (page 2, lines 39-42). The seal (figs.2 and 3) of Simpson et al. are illustrated as being substantially uniform and since the flexible flap (15) of Simpson et al. is disclosed of being made from plastic and since

known physical characteristices of plastics include flexibility and resiliency, the flap (15) of Simpson et al. being made from plastic is fully capable of providing the recited function of "...capable of allowing the flap to display a bias towards the seal surface.".

As to claims 52 and 53, the degree of a seal between the valve flap and valve seat sealing surface of Simpson et al. can be arrived at through mere routine obvious experimentation and observation with no criticality seen in any particular degree of seal. Further, it stands to reason that one oridinary skill in the art would strive to make a face mask in accordance with at least minimum current government standards of operation including one having a valve flap having a stress relaxation sufficient to keep the flexible flap in an abutting relationship to the seal surface under any static orientation for 24 hrs. at 70 degrees centigrade. The flexible flaps (15,18) of Simpson et al. is disclosed as being made of plastic and/or rubber for example (page 2, lines 39 and line 53). It would have been obvious to make the flexible flap from any well known flexible material including an elastomeric rubber such a polyisoprene as mere substitution of one well known flexible material for another and because elastomeric rubber is a well known material from which to make valve flaps.

As to claims 54 and 56, the particular dimensions, the particular material including the hardness of the material of the flexible flap (15,14) of Simpson et al. can be arrived at through mere routine obvious experimentation and observation with no criticality seen in any particular dimensions nor in any particular constituency.

As to claim 55, the second free portion of the flexible flap of Simpson et al. as modified by McKim has a profile that when viewed from the front corresponds to the general shape of the seal surface and comprises a curve (figs.1 and 2 of McKim).

As to claim 57, while Simpson et al. is silent as to the relative surface areas of the fixed and free portions of flap (15), it is submitted that the particular relative amounts of the fixed and free portions can be arrived at through mere routine obvious experimentation and observation with no criticality seen in any particular relative amounts including 10-25% fixed and 75-90% free.

As to claim 58, the flexible flap of Simpson et al. is positioned on the valve such that exhaled air deflected downward during an exhalation when the filtering face mask is worn on a person (fig.1 of Simpson et al.).

As to claims 59 and 60, Simpson et al. (page 1, lines 116-123) disclose the mask body is cup-shaped and comprises at least one shaping layer for providing structure to the mask, and a filtration layer, the at least one shaping layer being located outside of the filtration layer on the mask body.

As to claims 61 and 62, while Simpson et al. do not address the particular volume of a wearer's exhalation exiting the exhalation valve (12), it is submitted that since the exhalation valve (12) is expressly disclosed as opening in response to a wearer's exhalation, the valve of Simpson et al. is fully capable of providing the recited function inasmuch as it would remain opened as long as a wearer is exhaling which would enable most if not all of the volume including 60-73% of gas exhaled by a wearer to pass through valve 12 of Simpson et al..

As to claims 63 and 64, the exhalation valve of Simpson et al. (fig.1) is positioned on the mask body substantially opposite to a wearer's mouth and such that the second free portion of the flexible flap resides beneath the stationary portion when the mask is worn on a person.

4. Claims 34,35,42,47,48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simpson et al. in view McKim as applied to claims 33,43,44,46,49-64 above, and further in view of Braun ('362).

The difference between Simpson et al. as modified by McKim and claim 34 is the valve seat including one or more cross members that are disposed within the orifice.

Braun, in an exhalation valve for a filtering face mask, teaches cross members (19,20) disposed within the orifice and which are slightly recessed beneath the seal surface (18) for the purpose of increasing the sealing force (col.4, lines 36-41).

It would have been obvious to further modify the valve seat of Simpson et al. to include cross members disposed within the orifice because they would have provided increased sealing force as taught by Braun.

As to claim 35, Simpson et al. as further modified by Braun teaches a flap retaining surface that is located within an internal chamber defined by a valve cover (i.e. a valve cover of Braun).

As to claim 42, the flexible flap of Simpson et al. as modified by McKim (figs.1 and 3) would normally assume a flat configuration but is curved by virtue of its securement of the flap to the

valve seat and the relative positioning and alignment between the seal surface and the flap retaining surface.

As to claims 47 and 48, Braun teaches cross members (19,20) disposed within the orifice and which are slightly recessed beneath the seal surface (18) for the purpose of increasing the sealing force (col.4, lines 36-41).

5. Claims 36-41,45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simpson et al. in view of McKim and Braun as applied to claims 34,35,42,47,48 above, and further in view of French patent (1,209,475).

The difference between Simpson et al. as modified by McKim and Braun and claim 36 is a second member associated with the valve cover.

French patent ('475) teaches a valve cover (#2 of fig.1) which includes a second member (i.e. surface of valve cover (2) which abuts valve) that holds a valve flap between it and a retaining surface on the valve seat by a removable bolt (11) which allows for access to the valve for replacement and/or cleaning.

It would have been obvious to further modify the valve cover of Simpson et al. in view of McKim and Braun to make it removable because it would have provided access to the valve for replacement and/or cleaning as taught by French patent ('475).

As to claim 37, the flexible flap of Simpson et al. as further modified by French patent ('475) is secured to the valve by mechanical clamping (bolt 11 of French patent ('475)).

As to claim 38, the flexible flap of Simpson et al. as further modified by French patent ('475) can assume a curved profile, when in its closed state, that extends in from where the flexible flap contacts the second member of the valve cover to where the second portion of the flexible flap contacts the seal surface of the valve seat.

As to claims 39 and 40, the flap retaining surface of Simpson et al. (fig.2) is illustrated as being oriented transversely to and adjacent the orifice (16).

As to claim 41, the flexible flap of Simpson et al. as modified by McKim (figs.1 and 3) would normally assume a flat configuration but is curved by virtue of its securement of the flap to the valve seat and the relative positioning and alignment between the seal surface and the flap retaining surface.

As to claim 45, the exhalation valve of Simpson et al. as further modified by French patent ('475) includes a valve cover (2) with the flexible flap being held in position between the valve seat and the valve cover by mechanical clamping (#11 of French patent '475).

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aaron J. Lewis whose telephone number is (703) 308-0716.

Aaron J. Lewis

March 10, 2002

Aaron J. Lewis
Primary Examiner